July, 1955

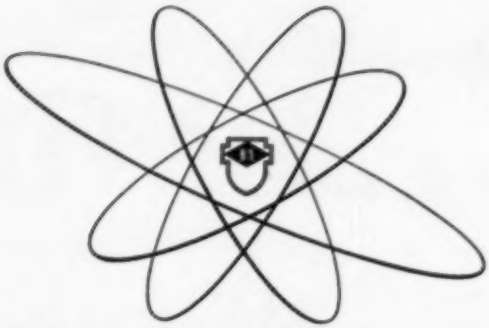
THE CHEMIST

VOLUME XXXII NUMBER 7

DR. PAUL D. V. MANNING

Receives Honorary AIC Membership

(See page 251)



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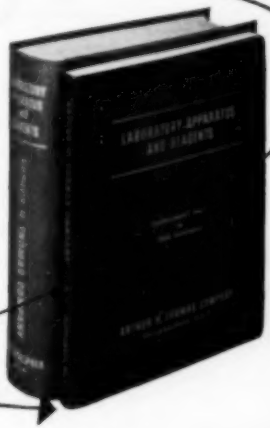

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Keep the Gears in Mesh, Dr. Charles D. Flory.
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Why Professionalism, Dr. R. P. Dinsmore, Hon. AIC.

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(Departments omitted or curtailed in this issue will be restored in later issues.)

TO COME IN AUGUST

Dr. William J. Wohlleben, F.A.I.C., head of the Department of Chemical Engineering, University of Dayton, Ohio, received the 1955 Ohio Award from the Ohio AIC Chapter. He accepted it with an address entitled, "For More and Better Chemistry Teachers." He commands an unusually fine literary style to speak with gentle wisdom on the "sweet condemnation" that is the dedicated life of the teacher. • Dr. R. P. Dinsmore, AIC president, asks (and answers) "Why Professionalism?" an article that should be read thoughtfully by every AIC member. • J. Warren Kinsman, vice president, E. I. du Pont de Nemours & Co., discusses, "Working with Salesmen," one of the fine papers presented at the AIC Annual Meeting.

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Careers: In Engineering and Science are featured in the April, 1955, issue of *Carnegie Technical*, publication of Carnegie Institute of Technology, Pittsburgh 13, Penn. Seventy-two, 9″ x 12″ pages are devoted to such subjects as the "Professional Road Ahead," "The Premium on Engineers," "Chemical Engineering," "Chemistry," "The Job: Facts and Figures," "The Engineer in Our Society," "Why Graduate Study?" A limited number of copies are available to prospective students, guidance counselors, and science teaechers. Request it from the Department of Public Relations of Carnegie Institute.

Chemical Industries Exposition: To be held at the Commercial Museum and Convention Hall, Philadelphia, Pa., December 5-9, 1955, under the management of the International Exposition Company, 480 Lexington Ave., New York 17, N. Y., E. K. Stevens, Manager.

First Cuban Congress: On Petroleum will be held October 21-23, 1955, under the sponsorship of Universidad de Oriente, in Santiago de Cuba, according to Dr. Felipe Salcines Morlote, rector of the University.

EDITORIAL

A Guaranteed Annual Income Plan for the AIC

Dr. Donald B. Keyes

Chairman of the Board of Directors, The American Institute of Chemists

NOTING the popularity of the G.A.W. plan with the non-thinking public, I would like to propose a G.A.I. plan for the INSTITUTE.

My motives are truly altruistic, as I am neither a labor leader nor a manager seeking to retain my office and the salary it provides. As chairman of your Board, I have no salary and according to our Constitution, next May I will be "removed" not only as chairman but also as a member of the Board.

Who will "guarantee"? Under the G.A.W. plan it is top management; under the G.A.I. plan it will be the same. It will be easier for our top management to "guarantee" as they are here today and gone tomorrow. It will be more difficult for top-management in industry, as some like to stick around and eventually receive a pension when they are too feeble to use it.

Who will pay the bill? Under the G.A.W. plan it will be the customer as long as he is willing to do so. Perhaps when he is not willing, the taxpayer will be required to as long as he is able to do so. Under the G.A.I. plan it will be you as a member, as long as you are willing and able to do so. I doubt that the Government will ever support our activities with tax funds.

It is obvious that a Guaranteed Annual Income plan for the INSTITUTE is an excellent idea, *but* you who must pay the bill should be allowed to express your opinions *before* our Board of Directors puts such a plan into effect (Yes, we have that power).

Please remember I am not a "hard-hearted" business executive or a "benevolent" labor leader, I am just a simple-minded chap who believes that the man who will be asked later to pay the bill should be asked beforehand whether or not he will. This is known as "Market Research."

Atomic Exposition: To be held at the Public Auditorium, Cleveland, Ohio, in December, under sponsorship of the American Institute of Chemical Engineers. For information: Atomic Exposition Office, 931 Book Bldg., Detroit 26, Mich.

Promoted: Dr. Hugo Zahnd, F.A.I.C., to professor of chemistry at Brooklyn College, Brooklyn 10, N.Y. He was formerly assistant professor.

Dr. Roy C. Newton, F.A.I.C., of Swift & Co., and Dr. Manning. Lawrence H. Flett, former AIC president, presiding at the Honor Recipients' Luncheon. *(See opposite page.)*

Retired: Bernard E. Schaar, F.A.I.C., president and founder of Schaar and Company, Chicago. Under his leadership since 1909, Schaar and Co. has become nationally recognized as laboratory equipment suppliers. Mr. Schaar has been honored by many technical and civic organizations, including the AIC, for his devotion to the interests of chemists as professional men and as individuals, for his untiring efforts in advancing the profession, for his years of service to technical societies, and for his participation to help develop a better community. C. E. Schaar was elected president of the company, and L. A. Rauch, F.A.I.C. was elected executive vice president.

Annual Meeting: Of the Federation of Paint & Varnish Production Clubs, and the Paint Industries' Show, will be held at the Hotel Statler, New York, N. Y., October 3-5, 1955. Dr. Herman F. Mark, F.A.I.C., of Brooklyn Polytechnic Institute, will deliver the annual Joseph J. Mattiello Memorial Lecture.

The Chemist and His Personality

Dr. Paul D. V. Manning, Hon. AIC

Vice President in Charge of Research, International Minerals & Chemical Corporation, 20 N. Wacker Drive, Chicago 6, Ill.

(Presented when the author received Honorary AIC Membership at the Honor Recipients' Luncheon, May 13, 1955, in Chicago, Illinois)

DURING the earlier part of my life when I was able to find more time for activities aside from the particular jobs at which I was gainfully employed, I worked on committees and held offices in several local sections of the American Chemical Society, the Electrochemical Society and the American Institute of Chemical Engineers. I was also quite active in the work of those professional and honorary fraternities of which I was a member. However, aside from one committee assignment early in the period of my membership, I have done nothing with THE AMERICAN INSTITUTE OF CHEMISTS. It therefore seems to me that it is becoming to question myself as to why. I did not apply for membership in this organization until about ten or twelve years ago.

Previously in common with a number of my friends, I discovered questions in my own mind as to why THE AMERICAN INSTITUTE OF CHEMISTS was founded; what does it do and what are the things that characterize it as an organization? What are and what should be its ideals and objectives? Since I really have attended some meetings, I know that these same questions are the concern of many of our members. I have heard and read much of the work of the INSTITUTE relating to the "Professional Status" of the chemist. Along with some others I reached the conclusion that the INSTITUTE seemed attempting to secure professional status for the chemist by legislation, by government license—that is to say by words and laws and not so much through deeds. Some members of our profession, feeling that chemists were not receiving either the professional recognition or the financial recompence for their work which they believed merited by the years of training and their endeavors, began to talk of the labor union type of organization. To some of us the AIC at one time seemed headed in that direction.

All of us have met with individuals who as chemists have expressed the opinion that they were underpaid and were not being accorded the professional recognition they deserve. We are familiar with the person who says he is not getting his "rights" and is often somewhat belligerent about it. Now in some cases, there is no doubt that just grounds exist for such statements but I am certainly of the opinion that these are few. In

my own life, I am sure after careful soul-searching, that if it ever seemed I was not receiving just treatment, it was due in a large part to my own shortcomings and actions—not to those of my employers or my associates. In the years that I have been responsible for administration and management of work being carried out by chemists, engineers and other scientists, it has been my good fortune to meet as employees only two or three persons who placed the attainment and safeguarding of their so-called "rights" as their first sacred duty. Perhaps it was a coincidence that these persons did not meet high standards of professional competency.

The kind of professional recognition attained through law, as by licensing of members of a profession, has for its primary objective, not so much the conferring of professional status upon the one who is licensed, but is a means whereby society attempts to protect itself from charlatans. Society always tends to move into those fields of human endeavor which have strong social impacts. Figuratively the state says, "I have examined this man's training and experience. His knowledge *should* enable him to do a competent job." I noted a few days ago, as I left the barber's chair that my barber who is a competent person in his own line, has an annual barber's license certificate which appears quite similar to, and was issued by the same Illinois Bureau as my certificate as a Professional Chemical Engineer! It does not seem to me that such occupations, honorable though they be, are *professional* in the same sense as the professions of law, chemistry and medicine.

Real professional recognition and status come through use of knowledge, experience and personality by the scientist in the development of his own individuality as applied to his chosen field. It has been usual to refer to the professions of science, law, theology and medicine as "the learned professions." The scientist should be above all things a thinker. Thinking develops individuality. Webster's Dictionary has this to say in defining the word profession: "The occupation, if not purely *commercial,* mechanical, agricultural, or the like, to which one devotes oneself: a *calling* in which one professes to have some special knowledge used by way either of instructing, guiding, or advising others or of serving them in some art, as the profession of arms, of teaching, of chemistry." Note especially please the connotation "of serving others." We shall refer to this later.

The Legal and Medical Professions

The legal and medical professions are constituted of men and women who have passed the bar or state board examinations in their respective fields—they are lawyers or doctors. It is logical and right that chemists and other scientists consider their occupa-

tion to be professional and to compare them with the professions of medicine and law. The scientist who pursues graduate work to the conclusion which brings to him the doctorate, carries his education to the point in his profession which is reached by the well trained lawyer or doctor of medicine in his training. In most of the accredited colleges and universities, we are considered formally trained as chemists and chemical engineers in four years of college work. A very few institutions may require five years. The master's degree is customarily received after one year of graduate work. The degree of doctor of philosophy in a chosen field of specialization usually is awarded after a total of seven or eight years of college and university study.

Law students put in a total of seven or eight years in college and law school. The requirements in the field of medicine are severe and seem to be getting more so. The best medical schools now require a bachelor's degree before professional studies are begun. To this is added four years in medical school. The degree of doctor of medicine is then awarded. The young doctor, however, can then take his state board examinations, but he cannot practice medicine until he has another year—as an intern in a hospital. This makes a total of nine years. He can then enter general practice. He may not specialize in his practice unless he puts in two to three years as a resident in a hospital, there undergoing further training for his selected specialty. Following this, he must practice this specialty and only this for several years before he can undergo national board examinations in his own field. This makes a total of at least eleven or twelve years from the time the young man or woman enters college until he or she is a full fledged specialist ready to start earning more than a bare living.

The pay during the year of internship runs from little or nothing to $250 per month depending on the hospital. The average is about $50. The best hospitals usually pay the least because they are most desirable for the internship. During his residency training for specialization, the remuneration may run as high as $300 per month but this is about the top. The minimum is about $100 and the average $200.

The newly graduated lawyer may receive from $250 to $400 per month when he starts in his first position. His pay increases are not rapid. As a law clerk for a federal judge, he may receive $4000 to $5000 per year.

Newly graduated chemists are not doing so badly then, when after only four years in college they may receive offers of from $350 to $525 per month. According to President Lee DuBridge of California Institute of Technology, in a recent talk to Northwestern University technical students, the average annual salary

offered to Cal Tech students receiving M.S. degrees this year is $5200. The maximum is of course much higher. Bids to Ph.D.'s range from $8000 to $9000 with one very outstanding man offered an annual starting salary of $12,000.

It should seem that the young chemist after only four years of college able to make a choice among several positions at salaries starting at $4000 and even over $5000 per year, would not need to be so concerned over contracts with his employer, the possibility of a union for chemists and other arrangements which place more emphasis on the security angle than on attainment of professional eminence by individual effort. When a man is young, concern over his job security may stifle his ambition and drive. He should be most concerned about gaining experience, maturity of judgment and through his work developing additional professional competency. In this present day no scientist need worry about securing a good job at any time or at almost any age if he has the ability and personality which the position requires. Moreover, when he is young he should not be adverse to changing his position if by such a change he can increase his rate of self development.

In his book, "Without Fame," Dr. Otto Eisenschiml, F.A.I.C., wrote of his own experience when upon emigrating to the United States as a young chemist, he found he could not get a satisfactory living wage in his profession. In his book he compares unfavorably the professional status of the chemist with the more pleasant situation of the lawyer. Dr. Eisenschiml then proceeded to do exactly what a large proportion of lawyers and medical doctors do. He went into business for himself and became very successful. Therein I think, is found one of the biggest differences between our profession as chemists and engineers and that of the legal and medical men. Relatively few scientists (excluding those in medicine) develop their own businesses. The prime reasons for this of course are found in the work itself. A minor but still important reason is in the fact that the lawyers and doctors are considerably older and more mature at the time of entering upon their professional life than the four year chemical graduate.

What the Young Chemist Needs

Now few of us believe it necessary to increase the number of college years required to graduate scientists. But what is needed is the opportunity for the young graduate in chemistry to associate closely with older men in the profession who will take an intimate interest in his development. The young chemist needs what his legal and medical counterparts receive in their professional school years. From the time the four-year college graduate enters the law or medical school he begins to asso-

ciate throughout almost every day with older members of his profession-to-be, who are usually in active professional practice. His classes, especially in medicine, are relatively small and he gets constant and intimate personal attention from members of the faculty. In my own generation, this personal contact with professors usually took place during our first four years in college as well, because the enrollments in colleges were very much smaller than at present.

Where can the young chemist look for this type of guidance in his self development? I think that here is one of the grandest opportunities for us as members of this INSTITUTE to make a real worthwhile contribution to the success of our young men, our profession, and thereby our organization. It is my earnest belief that no organization such as THE AMERICAN INSTITUTE OF CHEMISTS can attain the pinnacle of its potential success if it bases its activities essentially on what it can do for the somewhat selfish interests of its own members.

How the AIC Can Be of Service

I suggest that we work out an arrangement between our chapters and the colleges in each chapter area, whereby each INSTITUTE Fellow becomes a friend and advisor to several science students beginning in the junior year. Each INSTITUTE Fellow should also act as a Sponsor in our Profession to one or several science graduates just entering the profession and this relationship should be maintained for several years. Preferably the sponsoring professional should not work for the same organization as the younger man. Such an arrangement will result in the development of a friendship between the older man and the younger. During the latter part of his college years and the early part of his professional life the young chemist should be accorded opportunities of this type to develop friendships and close associations with older men in his profession. This relationship should be developed on an individual friendship basis with the older and younger men getting together more frequently than at the chapter meetings. At first the older man may feel that this will take too much of his time in unrewarding work. But within a short time, he is sure to realize that he himself is getting much that is worth while from the friendship that is being built up. Young professional men develop best and profit most by making good friends with older men in their own professions. The older man profits most by developing at least some strong friendships among the younger men.

Personal Attributes

Since there are so many opportunities in the sciences and engineering, what is it that limits the professional progress of the individuals? It is

usually that collection of individual characteristics, abilities and talents which make up what is termed personality. It has been said that "man is the only animal who is a problem unto himself." The balance sheet of each one of us, summarizing the different characteristics that make up a human personality can be classified as assets and liabilities. And, like the balance sheet of a business enterprise, liabilities can be changed to assets by work and growth. The personal attributes of any individual may be changed and improved but it is difficult for him to do it alone because honest self-appraisement is not easy. It is far simpler for one to be objective in viewing others than in seeing himself. It is here that the friendships with the older men will be of greatest value in the development of the ability to think objectively. Pure and honest objectivity in viewing and thinking is perhaps the most important accomplishment of any personality. It is not common, it is not natural—almost always it must be developed by much effort.

If we assume that the scientist has a good general basic knowledge of science and is thoroughly familiar with the fundamentals of his own field, knows where to find facts when needed, has the ability to use the tools of speech, economics, rapid reading, writing and good English, what personal attainments should he have if he is to continue to advance in responsibility and professionally as long as he cares to do so?

It seems to me that he should work to develop in himself the following personal attributes, each of which is a part of the most desirable personality. First he must have the ability to think analytically and objectively, selecting essentials that bear on problems, personal as well as others. He needs to be of absolute and uncompromising integrity in all thought and action. He must have a liking for other humans that bring about the ability to make friends and work with him as a part of a team or in friendly competition. He will have a supreme interest in his work, transcending the desire for money or personal gain. Next, a dedication of purpose will be required for this drives him to get things done to perfection without waste of time. Finally he will develop a sympathy and tolerance of the views, opinions and work of others.

These personal attributes, in my opinion are worthwhile goals. They will insure the future and professional advancement of the scientist. They can be developed by anyone who will make a real effort. One can do it more easily in his younger years if he has the sympathetic help of an older man of his own profession. Remembering the requirements of *unselfish service* which is found in the definition of profession, it is in this area that I believe we as members of THE AMERICAN INSTITUTE OF CHEMISTS can be of greatest help in building the profession of chemistry.

President Louis Ware of International Minerals & Chemical Corp., Dr. Manning and Dr. Donald B. Keyes, retiring AIC president.

Paul D. V. Manning

J. H. Nair, F.A.I.C.

Assistant Director of Research, Thomas J. Lipton, Inc., Hoboken, N. J.

(Talk given at the Honor Recipients' Luncheon of The American Institute of Chemists, La Salle Hotel, Chicago, Ill., May 13th, when Dr. Manning received Honorary AIC Membership.

DR. PAUL D. V. MANNING was born in Omaha, Nebraska, some sixty years ago. His parents removed at a rather early age to the Pacific Coast where Paul attended school in Salem, Oregon. For his college training, he selected nearby Willamette College where he met the charming Ted Ingalls, who was fated to share his later career with him. In his junior year, Paul transferred to Stanford University, Palo Alto, Calif., where he obtained the A.B. degree in chemistry in 1916. He then went to Los Angeles to acquire the M.S. degree from Cal Tech while assisting in the physical chemistry laboratory there.

With the advent of World War I, he transferred his activities to the Eastern Seaboard and joined the Ordnance Department of the Army as a

research chemist in its Nitrate Division. Here he carried on research work on the Bucher process for nitrogen fixation as well as working on catalizers for such fixation. Having a job, Paul had the good fortune to marry the charming Ted Ingalls. For a short time after the close of the war, Paul continued his work in the Fixed Nitrogen Research Laboratory and in the plant which the government was operating at Sheffield, Alabama, but soon decided to continue his graduate training in chemical engineering.

For this purpose he came to New York where he was variously engaged with the Chile Exploration Company on production of sodium nitrate from Chilean caliche; and then with International Coal Products Corporation, leading to the building and initial operation of a plant for the recovery of benzine and toluene from coke by the Bethlehem Steel Company. For several years he was an assistant to Dr. Colin G. Fink and Dr. A. W. Hixson at Columbia University, while pursuing his graduate studies. During this period, he worked part time in chemical industry, a very necessary economic development, for two of his three sons, Paul, Jr., and William, had put in their appearance. The third is Al. The Mannings at this time lived in one of those well-known railroad apartments of the Columbia University region. Thanks to Paul's friendly nature and Ted's infectious smile and cordiality, their home became a meeting place for a growing circle of friends.

Those who know Paul have always been tremendously impressed with his amazing capacity for hard work and his attention to the job in hand. Despite the long hours that he put in at Columbia and in part time work in industry, Paul took time to participate actively in both chemical and chemical engineering societies. His interest in the professional chemical fraternity, Alpha Chi Sigma, grew steadily. He eventually became national president of the fraternity.

Nonetheless, his zest for living and interest in other people never lessened his devotion to research. It is told about him that he appreciated the great need for a test of sobriety in those prohibition days. Pursuing this interest, he enlisted the willing aid of his companions to carry on some experimentation. It is said that he succeeded in devising a test which was capable of distinguishing well the difference between the lamentable effects of North Carolina "mountain dew" and the ordinary New York reclaimed alcohol.

Upon completion of his doctorate at Columbia he returned to California where for a while he was with Inyo Chemical Company at Owen's Lake and then established a consulting practice in San Francisco. During this period he acted as Pacific Coast editor of *Chemical & Metallurgical Engineering*. Some twenty years ago,

Paul accepted the vice-presidency of the Western Condensing Company in San Francisco, where he took charge of research and development as well as the building of a patent structure for the protection of the business of the company. This lead to the sale of over eighty patents. His energy was such that in addition to his technical work and his economic and business responsibilities within the company, he took time to lecture in chemical engineering at Stanford and subsequently in dairy science at the University of California.

Shortly thereafter, Golden State Creamery, the leading dairy organization on the Pacific Coast, found itself in need of a man to establish and develop a research laboratory. It took only two years for Paul to complete this job and look around for new worlds to conquer.

In 1941, he joined the International Minerals and Chemical Corporation in Chicago as director of research. Here he was individually responsible for the development of basic process plant design and the selection of equipment for the manufacture of magnesium metal by IMC in the early days of World War II. In 1943, he became vice president in charge of research for the company and he has continued in that responsibility to the present. Large expansion in the field of phosphates and installation of the largest plant capacity for monosodium glutamate in the United States have been two of his main interests since World War II.

Dr. Manning is the author or co-author of a number of research papers and is the holder of thirty-one U.S. and foreign patents. He is a member of a very lengthy list of societies, institutes, clubs, boards, and committees. He has been active in practically every group with which he has identified himself, being a past president of the New York Section of the Electrochemical Society and recently past president of the Agricultural Research Institute, among others.

Two of his sons have followed in their father's footsteps. Paul, Jr., is a chemical engineer with Stearn-Rogers while Al is likewise practising the profession with Eastman Kodak Company. Bill, the other son, has strayed a little ways to the application of science in treating human ills. He is in Medical School in Denver. Time alone will tell whether the tradition of the scientific disciplines will be adopted by the eight grandchildren.

I might continue indefinitely to enlarge upon the many contributions which Paul Manning has made to the professions of chemistry and chemical engineering during a long and fruitful career, but this is enough to make you realize that Honorary AIC Membership is richly deserved by this man.

Meeting of American Board of Clinical Chemistry

The American Board of Clinical Chemistry, Inc., held its annual meeting at Henry Ford Hospital, Detroit, May 20-21, 1955. Three clinical chemists, who successfully passed the examination by the Board were certified: Dr. Sol I. Dulkin, F.A.I.C., Lawrence C. Kier, and Dr. Otto E. Lobstein, F.A.I.C. The total number of certified clinical chemists is now 241.

Clinical chemists interested in being certified should write for *Instructions to Applicants for Certification,* as soon as possible, in order to be considered for admission to the next regional examinations, to be held, probably, during October 1955.

A complete *Directory of Certified Clinical Chemists* will be supplied without charge to hospital departments or other laboratories which engage in clinical chemistry. Request it from the Secretary-Treasurer, Dr. O. H. Gaebler, Henry Ford Hospital, Detroit 2, Michigan.

The Board elected the following officers: Marschelle H. Power, President; Clarence W. Muehlberger, vice president, and Oliver H. Gaebler, F.A.I.C., Secretary-treasurer. Other members of the Board are: Joseph W. E. Harrisson, F.A.I.C., Arnold E. Osterberg, William A. Wolff, Warren M. Sperry, F.A.I.C., Harry Sobotka, Robert M. Hill, and Albert L. Chaney.

Resigned: Dr. Joseph Schultz, F.A.I.C., from presidency of Lady Esther. He is now president of Consolidated Cosmetics, Inc., 30 West Hubbard St., Chicago 10, Ill.

Demonstrated: To the press by the Chemical Division of Koppers Company, Inc., an improved polyethylene plastic, called "New Super Dylan Polyethylene," distinguished for its toughness, heat and cold resistance, chemical resistance, tensile strength, and other properties. Developed from basic European patents, it has many applications in the manufacture of aircraft, housewares, toys, pipe, etc. Information may be obtained from the Chemical Division of the company at Koppers Building, Pittsburgh 19, Penn.

New Connection: For Dr. William H. Bowman, F.A.I.C., who is now assistant general manager of the Organic Chemicals Division of American Cyanamid Co., New York 20, N. Y. He was formerly with Jefferson Chemical Co., Inc.

Atomic Trade Fair: To be held September 26-30, 1955, at the Sheraton-Park Hotel, Washington, D. C., by the Atomic Industrial Forum of 260 Madison Ave., New York 16, N. Y. The theme of the fair is, "Marketing the Products of Atomic Energy."

Sizing Up Members for the Team

Dr. G. L. Royer, F.A.I.C.

Research Division, American Cyanamid Company, 30 Rockefeller Plaza New York, N. Y.

(Presented at the second professional session at the 32nd Annual Meeting of THE AMERICAN INSTITUTE OF CHEMISTS, Chicago, Illinois, May 13, 1955.)

WHEN you employ a chemist you may be making an investment comparable to a capital outlay of over a half million dollars when you consider salaries, overhead and fringe benefits for a 40-year lifetime of service. It is, therefore, desirable that one give serious consideration to hiring a new applicant and not refrain from spending money and time in sizing him up as a part of the team. It is important that you have enough contact with the applicant to evaluate him for your organization, and just as important, he must see enough of your organization so that he can come to a satisfactory decision. In this paper, interviewing of all types for both new and experienced employees will be discussed in a general way and then specifically employment interviewing of new professional employees will be discussed.

I attended an interviewing institute here in Chicago a little over a year ago. This institute was given under the auspices of Dr. William J. Giese and Associates, Consulting Psychologists. I feel I benefited a great deal from this five-day course and some of this paper will be from my notes taken at that time.

Types of Interviewing

Interviewing is considered to be a part of "communications" which covers all conversations with a purpose between two people. It covers all business relations on the job in exchanging information and exchanging motivation. Written communications are usually one-way instruments used as a mass medium and give apparent uniformity. Oral communications may be by public speaking which is a personal but a mass means, by conferences which are a two-way means of communications to groups as large as 10-15 and by personal interviews which are two-way and intimate. Communications can also be non- verbal and this includes pictures, mannerisms, posters, etc. Considerable care in monitoring one's behavior is necessary in the use of such non-verbal communications. In general, interviews can be divided into types such as appraisal, performance review, consultative, disciplinary, complaint and exit.

Appraisal Interview

At the interviewing institute this type of interview was covered by Professor R. F. Wilson of the University of Houston by a list of "Do's"

and "Don'ts" which were as follows:

Don'ts

1. Don't do all the talking — the difference in status makes it necessary for the interviewer to lead, but this does not mean that he should do all the talking.
2. Don't interrupt—give the interviewee the satisfaction to say it even if the interviewer knows the answer. Interruption cuts off the source of information from the interviewee.
3. "Don't "tip your hand" by the way you ask questions — "Don't you think?" type of question is a leading question. Don't ask, "How did you get along with your former boss?" Ask, "What kind of man was your former boss?" Don't be openly evaluative — especially early in the interview except for social pleasantries, but one should be honest with whom he deals.
4. Don't give advice freely — give help or facts, but one should restrict this to areas in which he is an expert and give this in a manner so that the interviewee can accept or reject.
5. Don't try to do something in the interview which can be done cheaper and better in some other way. For example, don't repeat questions answered in an employment form.
6. Don't form "global" opinions. A man is neither all good nor all bad. Try to find the good points in the bad and the weak points in the good.

Do's

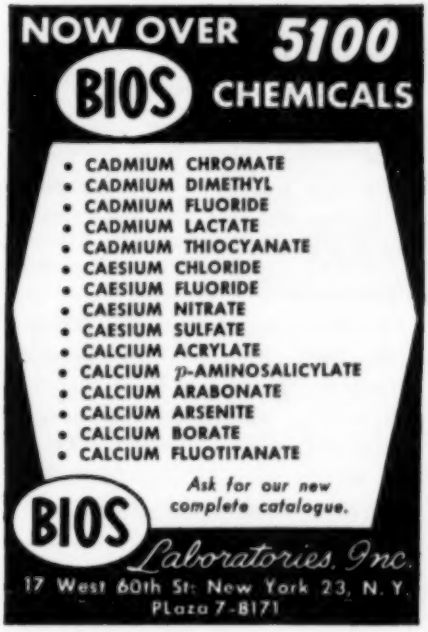
1. Do preconditioning—have pleasant surroundings, easily found location, pleasant, attractive receptionist, make appointments to avoid keeping the interviewee waiting but have things for the interviewee to do if he arrives early.
2. Do develop rapport (ease with each other) — privacy is a must. One should get acquainted first. It is most important that the interview be focused on the interviewee. Start the interview proper on a topic which is easy to talk about and flattering to the interviewee. Rapport is intangible *but vital!*
3. Do allow sufficient time.
4. Do listen — Professor Wicksell of Louisiana State University spoke on the subject of listening and emphasized the following points in regard to listening:

   Take time to listen.
   Get away from distractions.
   Don't doodle, play with objects, or look away.
   Stop talking when interrupted.
   Agree, doubt and question by word or gesture.
   Empathize (Put yourself in the other person's position with feeling).
   Encourage and extend what he says.
   Wait three seconds after he stops talking.
   Appear relaxed.
   Ask for suggestions.

Don't start for the door or seem to be in a hurry to get away.

5. Do use pause in the interview: (a) the courtesy pause of two to three seconds, and (b) the pregnant pause of ten to thirty seconds or one to two minutes. This is a stress technique. It puts the interviewee on the spot and should only be used with discretion.
6. Do make notes, record facts, use judgment codes — but do all of this with *caution!*
7. Do plan the interview — know what you want to get done and use notes, outlines or other aids.
8. Do remember the limitations of the interview — any interview is only a sample of the interviewee's experience and ability. During the interview the situation is different from the work situation. Interviewing is definitely limited by the interviewer's bias.

Interview testing was discussed by Dr. Giese who spent some time on the discussion of psychological tests and definitely expressed the opinion that they were limited, due to the fact that many of them had not been verified. He felt that certain simple job knowledge tests i.e. for carpenters, plumbers, etc. were satisfactory for general use. Aptitude tests which measure capacity or intelligence should be used carefully. Clinical tests which are used to judge personality should only be used by a psychiatrist or a psychologist. It was definitely expressed that this entire field is not as straightforward as many have indicated and is very difficult to carry out because of poor validation.



Professor N. C. Kephart, Associate Professor of Industrial Psychology at Purdue University, discussed evaluating personality from both a theoretical; and practical point of view. Emphasis was placed on the great importance of environment and its effect upon personality. Definition of environment was enlarged to cover all experiences of a human following birth — the same apparent environment being entirely different due to

the reactions caused by different experience. Development of normal personalities, rigid personalities, persons with brain damage, and those with creative ability were discussed. Some time was given to a discussion of therapy and how this was carried out by a psychiatrist.

Performance Review

In the modern industrial organization there has been considerable change within the last 10-25 years in the working relationship between employer and employee. Professor Aaron Q. Sartain of Southern Methodist University covered the general subject of human relations and emphasized the importance of job satisfaction, dignity of the worker, desire to participate, social acceptance of the job and need to be needed. The fundamental responsibility of the supervisor to help his subordinates to develop and grow was emphasized. There is a need to defend and enhance the self-picture because when the self-picture goes under pressure there is a reaction to defend it. This means in terms of supervision, a better understanding, more awareness of responsibility and the use of consultive supervision. The supervisor should be willing to do himself, anything he asks a subordinate to do. Emotional balance and control is necessary at all times. Each employee deserves to know how he stands in regard to the performance of his work, whether good or bad, not only on a day-to-day basis, but at regular intervals set up for general review of his progress.

Disciplinary Interview

Dr. Sartain stated that there must be discipline in all organizations and probably this type of interview is the most critical because it deals with personal feelings. Harsh discipline is bad but complete freedom is impossible; therefore, proper action should lie somewhere between. Freedom does not mean license but freedom with responsibility. Responsibility carries with it the delegation of authority. The strict authoritarian procedure is about gone and the *laissez faire* method of turning people loose is not practical. The democratic procedure is believed to be the best. This is leadership with consultation and participation, but the leader is responsible for the decisions. Mary Parker Follett has stated that decisions or the giving of orders should not be given by one person to another, but by the situation. By discovering the law of the situation, both the employer and the employee take their orders from the situation and not from each other. This leads to the importance of the delegation and taking of responsibility. Proper delegation of responsibility goes a long way in developing leaders and no one man can do all that must be done. Responsibility must be delegated, but it must be done wisely. A man and not the organization chart makes the job.

People are disciplined to change

them so they will do better work or as an example, to prevent other workers from doing the same thing which if continued would have an effect on the whole organization. Whenever possible, reasons should appear along with the rules and illustrations of the rules are often helpful. We tend to punish from the point of view of how it makes us feel and not from what the other person has done. We must keep ourselves under control and discipline by facts and not feelings. There is no place for emotional outbursts but one must be firm. It is very important to keep one's self under emotional control. In carrying out the disciplinary interview, the interview should be in a private location and should be planned.

One should be careful that the opening remarks set the proper tone for the interview. The general approach may be diplomatic or straight from the shoulder. In meeting the interviewee's defenses one should anticipate as well as possible, then martial the evidence and the way of expression. Don't argue, but have good reasons. The interviewee should know "Why" as well as "What" because arbitrary decisions are resented. The interviewee should know the penalty, but know that he has not been discriminated against. In closing the interview, one should close it in the frame of mind in which one wants to leave the interviewee; if possible, make a summary of the interview.

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Complaint Interview

There are other types of interviewing which are necessary in our industrial relations programs which do not necessarily come under the above heading. One of these is a complaint by an employee which may come as a result of either a manifest or a latent complaint. The manifest complaint is usually the one that the employee grumbles about, while the latent one is the cause of the feelings in the first place. It is first necessary in this type of an interview to find out which of the above you are dealing with. One must remember in this type of interview you are dealing with feelings. In this area many of the problems may be non-factual but they exist in the mind and during this type of interview every attempt should be made for the interviewee to talk freely since talk has great value in releasing emotional tension. The interviewee should be allowed to suggest a solution if he will, but in many cases the complaints must be rejected and, if so, the way may be more important than the rejection. Feelings

are important hence considerable care in handling this type of interview is necessary.

Consultative Interview

The counseling interview is another type in which the purpose is to give advice. It has the limitations that the advice may be poor if only one side of the problem is seen. There is the further difficulty of the counselor getting between a supervisor and his worker. This type of interview should be set up using non-direct interviewing techniques and a great deal of care should be taken in choosing the interviewer. The best policy is to get the employee to the proper party rather than to try to do it alone. Many companies are experiencing success with psychiatrists and industrial chaplains.

Exit Interview

When an employee leaves an organization, it is a good idea to have an exit interview. This is an information-gathering type of interview and may be of importance merely as a morale survey. It also may, under certain conditions, still save the employee as a member of the company if he can be moved to another position.

Techniques of Interviewing

The techniques used in interviewing can be classified as direct, non-direct and stress. These techniques should become habits and used naturally. Some of them are more applicable in certain types of interviews than in others and the technique to be applied will vary greatly depending upon the individuals involved in the interviewing.

Direct Technique

The direct interview, as the name implies, is carried out by asking questions to which one expects specific answers. For example, "Your name," "Where did you last work," etc. Often this type of interview is taken care of with application forms and, if so, it should not be used in direct conversation if the interviewer has had such information available from a prior contact. This approach is apt to be somewhat abrupt and may often be considered discourteous. Sometimes direct questioning can be phrased more diplomatically so that the interviewee can and will conform to his own wishes to produce a more desirable outcome of the interview.

Non-Direct Technique

In the non-direct interview it is possible for the interviewee to go his own way because it is given under an atmosphere of permissiveness or acceptance. It is used as a tool only when needed. The underlying assumption is that the interviewee is a specialist and the interviewer is a petitioner. In this technique of interviewing, use proper reflection of what has been said; use gestures; use such phrases as "Tell me more about it," "Tell me more," "I see," "I understand," and "Uh-huh;" use silence and good permissive listening. In using this technique don't: lead in the

conversation; state the answer you expect to receive; approve or disapprove of information received; give directions; argue; interrupt; reassure or discourage; show impatience, and don't assume being an expert.

The non-direct method is probably best in interviewing on personal problems. It cannot be used all the time in any interview, but one can profit by dropping into the non-direct role in many types of interviews.

Stress Technique

The stress technique is used to find out how the interviewee will act under actual strain of embarrassment and criticism. It may reveal more in a few minutes about certain aspects of his personality than can be found from his past records. The nature of the stress which is applied should duplicate as closely as possible the kind of stress that might be found in the job for which the person is being selected. As an example of the type of question used in this technique, Weinland & Gross ("Personnel Interviewing," Ronald Press, 1952) state an executive "might be asked to work out some plan with the 'aid' of a few assistants who hinder rather than help him" or a salesman "might be told that he doesn't know what he is talking about, that he is misrepresenting his goods, or that what he considers to be his best item can be secured elsewhere in a still better quality, etc."

This technique has been used quite extensively as a part of military psychology and by the legal profession in trials. Another stress technique, in addition to the choice of proper questions is the proper use of the pause. The short pause of two or three seconds is usually considered to be a courtesy pause, whereas a pause of ten to thirty seconds or up to one or two minutes is definitely a stress technique which puts the interviewee on the spot. One has to be particularly careful in the use of stress techniques and it is obvious that they cannot be used throughout the entire interview.

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Professional Employment Interview

At the present time the hiring of technical personnel is comparable to selling your products to a customer in a buyer's market. There are many ideas used in the sales field which we should keep in mind in hiring the applicant. First, we must have something to sell. This means that your company should be among the first

in the country in what it can offer the applicant. The important items in the personnel area have been covered by a report of the American Institute of Chemists' Committee on *The Employed Chemist and His Employer* ("The Chemist," Vol. 22, numbers 9 and 10). Assuming that your company is above the average in these points, you must realize you are in a competitive field and be able to sell the special features of your company's employment. This must be done by keeping in mind that the applicant is an individual with feelings that can easily be influenced by all the impressions which he will receive during the short period of the interview. It might be wise during all interviews to consider one's self in the applicant's place and treat him in the same manner as you would like to be treated. As an individual, the applicant holds himself in rather high esteem and having just received a bachelor's or doctor's degree, he feels he is pretty good. With this in mind, he must be treated with respect and any questioning must be carefully presented. You must remember that even if you do not convince the applicant that he should be your employee, you should sell him on your company. In the discussion which follows, the emphasis has been based upon "What Sells the Applicant." It is obvious that you must size up the applicant and all means for doing this must be considered in the overall program. Of course, some of the points may be over-emphasized, but this is being done in an attempt to bring out the factors which are important. The subject will be broken down into various phases for discussion.

Organization of the Interview

This can be organized by the Personnel Department in cooperation with the department or departments which the applicant is to see. A convenient date and hour should be set and an offer should be made to secure hotel and travel reservations if the candidate so desires. If the candidate is arriving the night before, it might be desirable to arrange to meet him at the hotel and entertain him that evening if possible in the home of one of the staff members. This would give an opportunity to meet the candidate under conditions different from that in the laboratory. Again, it might be done the evening following the interview if the applicant stays in a local hotel.

It might also be well to pick a recent school alumnus to guide the "tour" through your company and make it possible for the applicant to have the opportunity to discuss various matters with the alumnus. Have a definite time schedule which everyone will know, but do not let the candidate know that he is being held to a schedule. It might be desirable to make a special luncheon date to which three or four people could be invited, i.e., the alumnus, a director

or assistant director, a man who would associate with the applicant if he were employed, and an employee from another department—preferably a director or assistant.

In setting up the interview schedule, be sure that the man has the opportunity to meet the director of the department, one or two of the director's assistants, the man who will immediately supervise the work, a number of co-workers with whom he will be associated, a representative of one or two other departments with which he may have contact, and the representative of the Personnel Department. Only two or three of these should spend any time actually "interviewing" the candidate.

Offer to show the candidate part of the plant if he so desires and to show him any portion of your laboratories in which he might be interested. This could be in a different department from the one in which he is to be employed so he may become familiar with the equipment and laboratories which would be available to him in his work.

Reception by Personnel Department

The first contact which the applicant will have at your company will probably be with the Personnel Department. During this interview, the candidate should be welcomed to your company and shown an organization chart to indicate the relationship of the various departments and the line of progression. The diversification of your company business should be discussed and the financial status of the company presented. The important products of the company and their end uses should be mentioned. This may be done by the use of exhibits in a natural setting or by means of pictures. The benefits of hospitalization, pension, insurance, etc. should be explained. You can show the applicant the turnover figures of scientific personnel in your company and point out the community facilities such as housing, schools, transportation, etc. Information on the various opportunities to enter into community affairs might also be of interest. A short auto tour of the homes of the community on the way to or from the station might be arranged.

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Interview with Technical Personnel

The first contact should preferably be with the head of the department. This should cover the items which are desirable from the point of view of selling the applicant. Obviously, the actual interviewing to find out more about the candidate must be done by technical personnel. A de-

tailed evaluation should not be carried out by more than two or three people and their procedures should be integrated if possible so that they cover different areas. The various types and techniques of interviewing discussed above should be used to their advantage depending upon the situation. The information obtained by the campus interviewer, the college records, and references must be correlated with impressions and facts obtained by the personal interview. The proper interpretation of all of this information should lead to the decision of whether the candidate will be a good member of your team.

Outline the job your company has open and tell the applicant why the job opening exists and point out the opportunities which this position offers. After finding out that the job lies in the field of the candidate's interest, point out the opportunities of future work in this field. Try to create the impression that the applicant is needed and the job he will do is one of importance. Outline the progress of individuals in your present organization to show the applicant some of the prospects he might have.

Bring out the point that there exists in your area an opportunity for continuing education which the company encourages and supports financially. Show the opportunities of keeping abreast in scientific developments through the meetings of the many local technical and scientific societies. Outline what the applicant is going to do during the day of the interview, that is, what he will see and where he will go.

It is important that you have enough contact with the candidate to enable you to arrive at a definite conclusion relative to his employment. It is just as important that the applicant should see enough of your company, that is, the men, the laboratories, and the apparatus so that he too can come to a decision. The applicant must find out, is this the place he wants to work, does he like the people with whom he has had contact, does he like the type of position offered, does he like the working conditions where he will work, and does he like the salary, promotion and possible future the company will offer?

All of this must be done with sincerity. One must not oversell or give false impressions. So doing may sell the applicant, but if he finds out later that the facts or his experience with the company are not as presented he will be a dissatisfied employee. There is no substitute for good professional employer-employee relations. It is also well to remember that "a customer once sold is not sold forever." Selling is a continuous job. After our prospect comes to work, we must convince him continually that his decision was made wisely. This is the real basis upon which applicants are sold.

Working with Technical Writers

D. H. Killeffer, F.A.I.C.

Consultant, 168 *Westchester Avenue, Tuckahoe* 7, *N. Y.*

(Presented by Edward L. Gordy at the Second Professional Session of the AIC Annual Meeting, May 13, 1955 at Chicago, Ill.)

WHEN President Keyes asked me to share in this symposium and to discuss how to work with technical writers, he implied what seemed to me to be two vital ideas. The first is that chemists may very well find that someone else possesses to a degree that chemists cannot reasonably achieve the useful skill to present chemical ideas and conclusions. The second idea is that technical writing has attained the standing of a craft that chemists can properly recognize and use. While these ideas are not essentially new as of 1955, yet they are more widely held and more pertinent today than they have ever been before. Indeed, you could almost believe that the striking difference in their importance now as compared with only a few years ago gives them the status of novelty. Just now the topic is so lively that the "Letters to the Editor" column of one of our widely circulated chemical publications is filled with a footless argument about whether a chemist should or should not work with a ghost writer.

If this were the usual discussion of technical writing, it might at thispoint hold up to ridicule some sesquipedalian circumlocution from a chemist, such as "degradative studies resulted in postulation of a similar type of cyclic, non-benzenoid structure," or it might ridicule some strange flower of a writer's misunderstanding such as "Al + Cu = Au + Cl"! From such a beginning we might progress to a lesson in rhetoric and diction that would lead to useful rules of English composition: short works, short sentences, unified paragraphs . . . all this might amuse you or bore you; hardly could it instruct or train you in the fine art of expressing simply and clearly your thoughts on abstruse subjects.

There is much more to the matter than that.

There is substantial usefulness to a chemist in being able to think of element number 6 and thereby imply a broad range of its properties. But not to anyone else.

A gag that chemists always laugh about follows one of the many modifications of this old pattern:

"I think I'll go down town and get a birthday present for my girl."

"What are you going to get her?"

"Oh, a couple of hundred milligrams of element No. 6."

Cartoonists dress up gags of that family and readers roll on the floor laughing at them. But it is sometimes

tragic, if you have element number 6 to sell by the couple of hundred milligrams, that nobody wants it.

The same thing might even have been true during the late winter if if you had been trying to sell ethandiol-1,2 by the kilogram.

And sales resistance would hardly be lessened when you told your prospect that element six sells for about $1 per milligram, and higher in larger lots; or that 70¢ per kilogram is about the right price for ethandiol-1,2.

The reason clearly is that chemical products, even element number 6, possess no particular intrinsic worth. In the same way, beautiful syntheses or exact analyses get minimum appreciation outside of the laboratory. Only when they can be put to useful work do they become valuable. Only if you want to use them for some good purpose are you even mildly interested.

Naturally your view changes when you find out that 200 milligrams or so of element 6 would make an attractive gem to give your best girl set in a ring, since that would be a one carat diamond.

Ethandiol-1,2 becomes interesting, too, to every motorist when he learns that it is ethylene glycol anti-freeze that would have saved him the expense of a cracked engine block in January.

The public has heard about diamonds for some centuries and about ethylene glycol for a couple of decades, so that those names now mean something.

But it is not so easy with a new product wrapped up in a jaw-breaking label and with only one or two abstruse possible uses. Then the real job is to tell people about your wonderful new stuff and to persuade them to use it for the purpose you have discovered or for some other use of their own.

What you need is a properly presented, informative discussion of your new product or idea.

The essential point here is in those qualifying adjectives. No jewelry publication could be enticed to publish a piece about element number 6, and it would be an odd automobilists' paper indeed that could get excited over ethandiol-1,2. But something new about diamonds, or a new aspect of the anti-freeze problem—those are quite different!

The properly presented, informative discussion must above all be suited to the audience. It must be skilfully written just for them, and must, as the old rule requires, "neither underrate the readers' intelligence, nor overrate their information." Indeed, writing of such a discussion requires a high type of specialized skill. It is reached by unskilled writers about as often as Nobel prize researches are performed by amateur scientists.

For the purposes of this discussion we can conveniently distinguish sci-

entists, who are specifically doers, from technical writers, who observe and interpret. The two functions are quite distinct although both types of people may have received the same basic training.

Indeed, the points of view of scientists, properly so called, and writers, or publicists, are completely different. It is foolish to think of changing one into the other. All that such a change could accomplish is to reach a compromise that would leave neither writer nor scientist, but rather a sort of hybrid that could excel at neither calling.

If on the other hand, one brings together on a basis of mutual helpfulness a scientist with something to say and a writer with a trained ability to say it, the result can be a true synergy and the team can accomplish a great deal in fostering understanding.

It seems hardly necessary to emphasize now the great and urgent need for general understanding of the overall thinking of science and its applications. The catastrophic penalties for misunderstanding are too obvious and the facility of evil men to turn progress into disaster are too constantly with us. Only by understanding the tools that scientists have fashioned and by respecting the human values involved in their use can humankind avoid self destruction.

If sympathetic understanding is essential on the world scale, it is also invaluable on each smaller scale, even between brothers and immediate neighbors. Sometimes scientists can achieve mutual trust and sympathy with their neighbors and even with larger sections of the people within limited areas. But most often this requires a disproportionate degree of effort, an expenditure of energy and a use of time that an individual scientist can hardly afford. Even if the effort is successful, the return is seldom worthwhile in comparison with what the same scientist could accomplish at his own calling. In this, as in any other activity, an individual must evaluate the cost in time and energy taken from fruitful work and the reasonably expected return in terms of understanding, and he must then compare these values to find whether the result should appear in red ink or black.

Principally, the technical writer is the middle man in the communication chain; but his function is that of a converter of ideas, not just a trader. He must learn what the chemist has to say with least reasonable trespass on the chemist's time and energies. These he must conserve for other more valuable purposes. Then he must visualize and personalize the audience that should understand the chemist's idea. Perhaps this may be a single individual, the boss. Or it may be the board of directors. Or the company's customers and prospects. Or finally, it is possible that what the chemist has to say may be sig-

nificant to all people. In each case the writer has the important duty to state the idea in terms, and explain it against a background, that each particular audience will readily understand. Usually ideas and opinions from others (engineers, production people, salesmen, and others) must be introduced into the telling to complete the picture for any particular audience. These addenda are likely to be considered mere embellishments by the chemist himself, but the experienced writer will know in each case just how much of this kind of thing is integral with the fabric of the story and how much gratuitous adornment. What the chemist must contribute to the joint enterprise is implicit in this summary.

Perhaps the function of a technical writer can be better understood if we examine a hypothetical case. Let us assume that the chemist's problem is to evaluate fabrics for a bag filter needed to recover dust from hot flue gas. The purposes are to raise yield and to overcome nuisance. Just what his results indicate must be all things to all men. Only the purchasing agent needs to know the exact weave, weight and fiber content of the best fabric, because he has to buy it. The plant manager is interested in the effectiveness of the clean-up in terms of both yield increased and nuisance abated. The plant engineer has to figure the added back pressure on his blowers. The maintenance crew must determine the life of the bags and how often they will have to be replaced. The treasurer and the comptroller see only the investment in new equipment and the possible return on it. The company's lawyer must convince the civil authorities that the nuisance is abated. The president thinks of his relations with the plant community. The directors look at it as an example of the efficiency of the staff. And finally, the stockholders expect their dividends ultimately to be raised by this investment of more of their funds. Only the chemist making the initial investigation can say whether the fabric should be made of the new "ordacot" fiber or something entirely different, but when he has said that he has only started a chain of statements that extend far beyond his authority and outside his interest.

No chemist need feel embarrassed if his personal understanding falls short of compassing all the possible implications of his work. The more he does understand of these things, the better. But his abilities are necessarily finite and best devoted to his own field of expertness. Certainly no one can possibly criticize a chemist who relies upon the skill of a technical writer to make his meaning clear to others.

A vast change has occurred in the public attitude and understanding of science and its implications of the past three decades. Clearly this attests the highly important and valuable service technical writers have ren-

dered to scientists on the one hand and to people generally on the other. The division of labor between the doer and the interpreter, when the doer is a scientist, is one of the most fruitful in our times. It is a natural synergy of two important skills that is vastly productive. Its mechanism is simple and obvious so long as both doer and writer recognize the fact of co-operation and its value.

Communications

Fact Omitted

To the Editor:

John Kotrady's excellent editorial, "Committee Management" in the May issue of THE CHEMIST, left out one important fact. If one has twenty-three committees to manage, it is obviously essential to have a "John Kotrady" in the top command.

—DR. D. B. KEYES, F.A.I.C.
New York, N. Y.

Glad to Have It

To the Editor:

The December, 1954, edition of the AIC directory of membership is a nice job. Am very glad to have it!

—ELBRIDGE S. STEVENS, M.A.I.C.
New York, N. Y.

Permission Granted

To the Editor:

We should like to reprint the S. D. Kirkpatrick article, "Chemists Are Human Beings" which appeared in the "Hexagon" for April 1953, as reprinted from THE CHEMIST for January, 1953. We would like to use this article in our Basic Supervisory Training Program. May we have permission to do this?

—JOHN HITE
New Brunswick, N. J.

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Good Advice

In *Textile Age*, April, 1955, in a column by P. J. Wood, F.A.I.C., we noted the following item:

Shortage

"In the December number of "THE CHEMIST," official organ of The American Institute of Chemists, headed "Opportunities" are listed under "chemists available"—4, under "positions available"—13. Happy chemists, not so happy employers. The trouble is that young men (and women) are simply not being attracted into the profession of chemistry. If every section and subsection of A.C.S. would interest itself in this subject, appoint a speakers' committee to go into the high-schools and do a real selling job, the situation could be, and it should be, corrected. We have always considered chemists as the salt of the earth, but here is one respect in which they are apparently not doing all that can be done for the honor and progress of the profession. Q.E.F."

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L. T. Work, *Past President*

April Meeting

The 302nd meeting of the National Council of the AIC was held April 13, 1955, at 6:00 p.m., at The Chemists' Club, New York, N. Y. President-elect Ray P. Dinsmore presided. The following officers and councilors were present: Messrs. R. P. Dinsmore, A. W. Fisher, Jr., L. H. Flett, K. M. Herstein, F. A. Hessel, E. Ott, M. Sittenfield, C. L. Thomas, L. Van Doren, and Miss F. E. Wall. Dr. L. T. Eby, chairman of the Membership Committee, Dr. G. L. Royer, chairman of the Committee on Employer-Employee Relations, and V. F. Kimball were present.

The Secretary reported that the AIC had 2718 active members. He announced with deep regret the deaths of the following members: Dr. Joseph S. Chamberlain, F.A.I.C., on Feb. 17, 1955; J. C. Rambo, F.A.I.C., on Feb. 5, 1955; Dr. William I. Shaw, F.A.I.C., on April 3, 1955, and Dr. Kenneth F. Stripp, A.A.I.C., on July 10, 1954.

The Secretary presented resolutions prepared by Dr. Alexander Schwarcman on the death of Lester F. Hoyt, AIC councilor from the Niagara Chapter, as follows:

Resolution

Whereas, our good friend and colleague, Lester F. Hoyt, passed to his reward on Dec. 22, 1954, and

Whereas, he was Council Representative from the Niagara Chapter, AIC, as well as a member of many other societies and for many years an outstanding authority on soaps and detergents, and

Whereas, his many friends in The American Institute of Chemists deeply miss his presence as a gentleman of the highest integrity, scholarly achievement, and his generous readiness to share informa-

tion with whomever appealed to him,

Be it therefore resolved, that the National Council of the Institute at its meeting on April 13, 1955, expresses its deep regret that Lester F. Hoyt will no longer be with us, and

Be it further resolved, that a copy of this resolution be sent to Mrs. Lester F. Hoyt and family as an expression of our sympathy, and to the president of the National Aniline Division of the Allied Chemical and Dye Corporation, with whom he was associated for many years, and that a copy remain in the permanent files of The American Institute of Chemists.

Upon motion, these resolutions were adopted.

The Secretary presented a request from Council Representative, H. A. Levey of the Louisiana Chapter, requesting speakers on professional subjects, and inviting AIC members who happen to travel within that area, to contact him, if they desire to speak.

The Secretary reported that the changes to the Constitution, which had been sent to Fellows of the INSTITUTE for vote had been approved. (See page 237, THE CHEMIST, June 1955.)

The Secretary submitted Dr. Keyes' resignation as AIC president, to take effect at the conclusion of the 1955 Annual Meeting. This resignation was accepted with regret and with appreciation of Dr. Keyes' leadership as president, his many contributions to the aims and objectives of the AIC, and his outstanding service. In his letter of resignation, Dr. Keyes explained that "this action is being taken to implement the revisions of the Constitution; namely, to restrict the term of office of the AIC president to one year instead of two."

Dr. Royer reported that he had talked in Washington with the Manpower Division of Selective Service.

Dr. Eby reported progress as chairman of the Membership Committee.

Dr. Dinsmore emphasized that the AIC is the only society which has as its sole purpose the improvement of the professional status of chemists and chemical engineers, and that those who join do so because they want to do something for the professions. It would be helpful to members and non-members alike, if we defined what is meant by professionalism. Is it salary alone, or prestige, or the regard of laymen in general, or other factors? Or a combination, and if so, in what order. To different groups, such as the industrial worker, the college student, the college professor, the government worker, different objectives may seem most important. We should define clearly what we mean by promoting the professional objectives and assess their value to the different groups.

Dr. Royer reported for the Committee on Employer-Employee relations that the Committee is reviewing, in cooperation with the Washington Chapter, the standards for chemists being considered by the Federal Civil Service. He also announced that the matter of workman's compensation as it applies to professional people deserved consideration. Other matters needing attention are retirement programs, the laying off of professional persons when a company decreases the research staff, and problems affecting professional people.

Dr. Fisher stated that the New England Chapter is set for the 1956 Annual Meeting to be held in Boston.

Mr. Herstein reported that the New York Chapter is planning a program for disability and health insurance for its members, and that he had attended the hearings on the New York State and City Civil Service salaries for chemists.

The following new members were elected:

FELLOWS

Schay, S. Rus
Plant Manager, Polak's Frutal Works, Inc., 33 Sprague Ave., Middletown, N. Y.

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CHICAGO 47, ILL.

Stark, Samuel M. Jr.
Southern Utilization Research Branch, A.R.S., U.S.D.A., 2100 Robert E. Lee Blvd., New Orelans 19, La.

Timm, John A.
Director, School of Science, Simmons College, Boston 15, Mass.

Zabel, Herman W.
Executive Vice President, Roger Williams, Technical & Economic Services, Inc., 148 East 38th St., New York 16, N. Y.

MEMBERS

Castrucci, Manlio S.
Assistant Technologist, Central Labs., General Foods Corp., 11th & Hudson Streets, Hoboken, N. J.

Feinberg, Max
Chief Chemist, Armed Services Medical Procurement Agency, 84 Sands St., Brooklyn, N. Y.

Lane, Noel West, Jr.
Chemist, Supervisor. Los Angeles Testing Laboratory, 1300 S. Los Angeles St., Los Angeles 15, Calif.

McLamore, Dr. Elise Kraft
Herstein Laboratories, 66 Beaver St., New York 5, N. Y.

Pinigis, Edwin J.
Technical Service Representative, Agricultural Chemicals Dept., American Potash & Chemical Corp., Eston Div., 3100 E. 26th St., Los Angeles 23, Calif.

ASSOCIATES

Kullman, Russell M. H.
Southern Regional Research Labs., U.S.D.A., 2100 Robert E. Lee Blvd., New Orleans, La.

Squerciati, Edward C.
3147 Perry Ave., New York 67, N. Y.

REINSTATED AS FELLOWS

McCord, Andrew T.
Director of Research, Carborundum Metals Co., P. O. Box 32, Akron, N. Y.

Schenberg, Samuel
Supervisor of Science for the N.Y.C. Board of Education, 110 Livingston St., Brooklyn 1, N. Y.

RAISED FROM ASSOCIATE TO MEMBER

Hotelling, Dr. Eric B.
Research & Development Division, Pittsburgh Consolidation Coal Co., Library, Pa.

AIC Activities

C. P. Neidig, F.A.I.C.

Niagara Chapter

Chairman, Warren B. Blumenthal

Chairman-elect, Dr. Carl H. Rasch

Secretary, Dr. Joseph B. Muenzen, S.J. Canisius College, 2001 Main St., Buffalo 8, N. Y.

Treasurer, Dr. Maurice H. Fleysher

Election of Officers

At a recent meeting of the Niagara Chapter, the officers shown above were elected for the 1955-1956 fiscal year.

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To AIC Members

If you are in Minneapolis during the American Chemical Society's National Meeting, September 11-16th, look for an announcement of a luncheon of THE AMERICAN INSTITUTE OF CHEMISTS to be held on one of those days.

Opportunities

Doris Eager, M.A.I.C.

AIC members who are seeking positions may place notices in this column without charge.

Positions Available

Director of Textile Development. B.S. in chemical engineering, chemistry or textile engineering. Must have had successful commercial development of new and modified fabrics, extensive knowledge of textile fibers, their abilities, limitations and uses. Working knowledge of resins and binders useful. Age to 55 years. Location Eastern Seaboard. Salary $12,000 plus benefits. Box 71, THE CHEMIST.

Chemical Manufacturing Manager: To supervise manufacturing plant of old established chemical firm in Midwest. Will be responsible for about 1000 men. Must have line experience in any chemical field, including responsibility for maintenance. Age 45 to 55. $20,000 range. Box 73, THE CHEMIST.

Manager of Product, Process, Material Research and Development. B.S. in chemistry or chemical engineering. Minimum 5 years as head of product process, material research and development laboratory. Fully conversant with initiation and establishment of controls, procedures and systems needed for product, process, material research and development in paper and paper coating. Location Chicago. Salary $10-20,000. Box 75, THE CHEMIST.

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Chief Design & Development Engineer. Prefer professional engineer with B.S. in Mch.Eng., specialized study in automatic machine design. Minimum 5 years experience in multiple process and products as chief design and development engineer in the paper industry. Able to install and supervise all machine design and development activities. Location Chicago. Salary $10-20,000. Box 77, THE CHEMIST.

Plant Manager. Minimum 10 years experience as plant manager in paper conversion or similar industry. Able to initiate and administer design, installation and supervision of all controls, procedures, systems and methods for control and coordination of all line and staff manufacturing activities. Capable of recommending new or altering products. Location Chicago. Salary $10-20,000. Box 79, THE CHEMIST.

Editor, current abstracts. Degree in chemistry or biology. Editorial experience desirable. Able to meet printing schedules. Will publish "Current Abstracts" twice monthly, participate in literature searches and in normal library duties. Salary $65-70 per week. Location Metropolitan New York. Box 701, THE CHEMIST.

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Senior Medical Technician No. 2088. Graduate of approved course in medical technology and 2 years experience as technician in medical laboratory; or 4 years of supervised experience in medical laboratory. $3540 to $4490 in five annual salary increases. Apply N.Y. State Employment Service Office or write State Dept. of Civil Service, Gov. Alfred E. Smith State Office Bldg., Albany, N.Y.

Chemists Available

Development Chemist. Applications Research. Seeks challenging position to make full use of administrative ability, scientific and business know-how of the major fields. Fifteen years, progressively difficult experience. 9½ years, director of a chemical laboratory conducting research development, product evaluation, quality control. Box 70, THE CHEMIST.

Marine Consultant thoroughly familiar with requirements and problems in U.S.A., Central & South America and South East Asia. 18 years experience; 2 additional years in Indonesia. Strong in marine fisheries engineering and development fields including gear, boats, engines, electronics, protective coatings, etc. Heavy experience in sales engineering, surveying marine markets to establish potentials, and in the preparation of working reports. Married, Harvard educated, willing to travel or relocate. Desires immediate connection, available for interview any time. Box 72, THE CHEMIST.

Chemist. 36, 11 years experience includes inorganic industrial work in batteries, electroplating, glues and gelatines, textile, and physical and chemical commercial testing; desires Middle Atlantic States location. Box 74, THE CHEMIST.

Industrial Chemist. 20 years experience in analytical, research and development—water, protective coatings, electroplating, isotopes, corrosion, petroleum products, miscellaneous organic and inorganic, ferrous and non-ferrous metallurgy. Age 43. Family. B.S. Desires technical service or sales liaison position. Box 76, THE CHEMIST.

Something New

"Double Hydraulic Pump Units with Integral Valve Panels." Information. The Dudco Div., New York Air Brake Co., 1700 East Nine Mile Rd., Hazel Park, Michigan.

"Boiler Feedwater Treatment." Technical Reprint T-128. Graver Water Conditioning Co., 216 W. 14th St., New York 11, N. Y.

"Sili-Kool, heat, rust and corrosion resistant silicone paint for high temperature surfaces." Brochure. C. H. Dragert Co., Inc., 2518 Chalk Hill Rd., P. O. Box 5092-L, Dallas, Texas.

"Semi-Works Spray Dryer." Information. Bowen Engineering, Inc., Station Ave., North Branch, N. J.

"Microcard Edition of Unclassified Reports of AEC." Information. Microcard Foundation, Middletown, Conn.

"Symposium on Color of Transparent, Translucent Products." 32 pp. 8½" x 11". $2.00. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

"Sintered Bronze Filters." Catalog. Permanent Filter Corp., 1800 W. Washington Blvd., Los Angeles 7, Calif.

"A List of American Standards—1955." 48 pp. American Standards Assn., 70 E. 45th St., New York 17, N. Y.

"Laboratory Dispersion Mill." Information. Kinetic Dispersion Corp., 95 Botsford Place, Buffalo 16, N. Y.

"Copper Strip Corrosion Test Bomb for Petroleum Products." Data Sheet No. 11515. Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill.

"Drage Viscometers." Excellent 12-page brochure with 20 illustrations, which includes the theory and practical application of viscosity measurement and control. Drage Products, 406-32nd St., Union City, N. J.

"Food for Tomorrow." Reprint of article by Dr. Francis Joseph Weiss, F.A.I.C., 2000 37th St., N.W., Washington 7, D.C. in *Agricultural & Food Chemistry*. "The author examines some possibilities . . . for making fuller use of the products of photosynthesis."

"Fisher Spectro Analyzer." Bulletin FS-252. Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

"ElectroniK Potentiometer — Carbon Monoxide detector." Data Sheet No. 10.15-13. Minneapolis-Honeywell Regulator Co., Station 213. Wayne & Windrim Aves., Philadelphia 44, Pa.

"Compound 19. New Anti-oxidant." Information and samples, Sindar Corp., 330 W. 42nd St., New York 36, N. Y.

"Mesa Miracle." Uranium industry on Colorado Plateau. 36 pp. U. S. Vanadium Co., Room 308, 30 East 42nd St., New York 17, N. Y.

"How to Bookbind it Yourself." Booklet. Tauber Plastics, Inc., 200 Hudson St., Dept. BK, New York 13, N. Y.

"Ansul Dry-Eye System." Device to detect moisture in refrigeration systems, reducing breakdowns. Information. Ansul Chemical Co., Marinette, Wisconsin.

"Thick-Coat." Resin Coating product for corrosion protection. Information. Corrosion Engineering Products Dept., Pennsylvania Salt Mfg. Co., 3 Penn Center Plaza, Philadelphia 2, Pa.

"Thioacetamide Available." Information. J. T. Baker Chemical Co., Phillipsburg, N. J.

"Tables of Error Function and Its Derivative." NBS Applied Mathematics Series 41. 302 pp. $3.25. Order from Government Printing Office, Washington 25, D.C.

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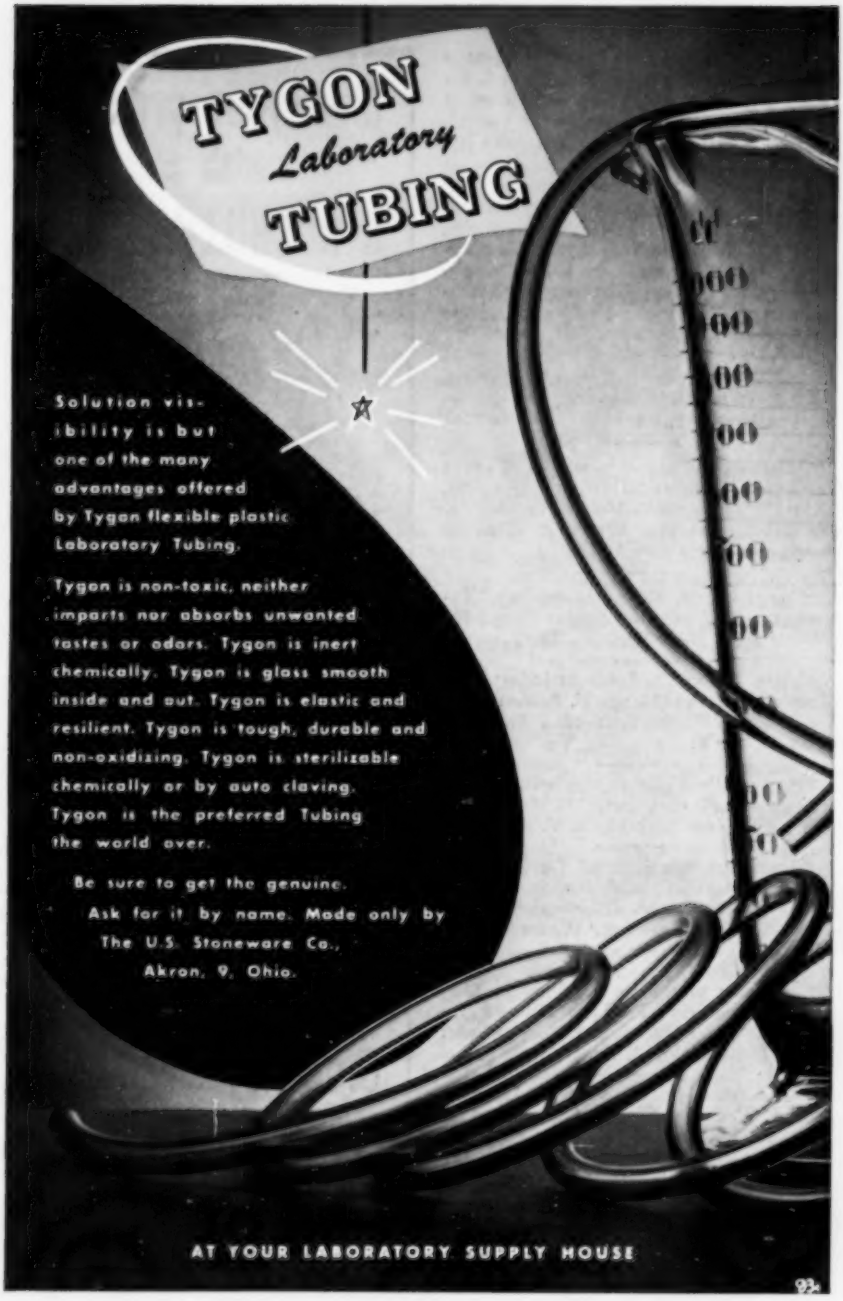
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